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ABSTRACT

The economic benefits of nonresident college students on the West Virginia economy were assessed. Estimates were made of the approximate effects of tuition and fees, visitors' expenditures, and student living expenses. During the 1985-1986 academic year, the 10,091 nonresident students enrolled in West Virginia higher education institutions contributed an estimated $72,182,000 in direct economic benefit through tuition and fees, living expenses, and travel expenses of parents and friends. The $72,182,000 flowing through the state's economy generated $86,618,318 in direct and indirect financial benefit to the state, while the state allocation attributed to the education of these nonresident students was $28,668,537. For each one dollar invested by the state in nonresident students, the state realized a return of $3.02 over the period of one academic year. The direct economic contribution from nonresident student tuition and fees was calculated by multiplying the annual nonresident graduate and undergraduate tuition and fee charges for 1985-1986 by the full-time equivalent (FTE) student enrollment. For each institution, data are provided on tuition and fees charges, estimated contribution to the economy, and living expenses. Benefit to cost comparisons are also shown for the state. 17 references. (SW)

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An Analysis of the Economic Benefits of Non-Resident Students Enrolled in West Virginia Higher Education Institutions

A Study Conducted for the West Virginia Board of Regents

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ABSTRACT

An Analysis of the Economic Benefits of Non-Resident Students Enrolled in West Virginia Higher Education Institutions

During the 1985–86 academic year, the 10,091 non-resident students enrolled in higher education institutions in West Virginia contributed to the state economy an estimated $72,182,000 through tuition and fees, living expenses and travel expenses of parents and friends. The $72,182,000 flowing through the State's economy generated $86,618,318 in direct and indirect financial benefit to the State, while the state allocation attributed to the education of these non-resident students was $28,668,537. This return on investment, a benefit to cost ratio of 3.02, represents the net economic impact on West Virginia's state and local economies associated with higher education's non-resident enrollment in 1985–86. The ratio suggests that for each one dollar invested by the state in non-resident students, the State realized a return of $3.02 over the period of one academic year.

In this study generic calculations of economic benefit dollars "spent in the economy" are shown as a ratio against tax dollars spent in promoting the activity. This activity is similar to the concept of "matching money" often used by the federal government and other philanthropic agencies. The state of West Virginia receives $3.02 spent in the economy in return for the $1.00 provided from state tax revenues.

The Economic Impact of Non-Resident Students on West Virginia's Economy

Statement of the Problem

In recent years, the cost of quality higher education has increased dramatically both to the institution and to the students. Passing on the operational increases, at least in part, to the students in the form of increased tuition and fees has been a relatively common and accepted practice. But this solution, as with many financial alternatives, soon reaches a point of diminishing returns—student costs rise beyond that which the market will bear and enrollments begin to decline. At a time of decline in the traditional college-age population internationally, the added disincentive of increasing costs—possibly resulting in the removal of one's competitive edge in terms of student costs—can be devastating to the vitality of an institution. Therefore, it is advantageous for an institution to evaluate its resource costs and benefits from a system's perspective in order to identify alternative, innovative, perhaps even counter-intuitive strategies for solving the problems of rising operational costs.

In the United States, most, if not all, publicly-supported institutions have traditionally differentiated between resident students of the state and non-resident students in terms of tuition and fees, non-resident charges being significantly higher than resident charges. In recent years, however, declining enrollments have resulted in a more competitive student market, and the long-standing practice of higher non-resident charges has resulted, at some institutions, in significant declines in non-resident enrollments. Is this decline in the best economic interest of West Virginia? When significant efforts and expenditures are being made to attract tourists into the state, shouldn't

non-resident students enrolled in higher education be, at least, considered as tourists? They come from out-of-state, spend large sums of money, and best of all, spend not one or two weeks or several weekends but a full nine or more months in the state contributing to its economy. In addition, other visitors (parents, other relatives) come into the state as a direct result of these students being enrolled in West Virginia's higher education system.

This analogy is somewhat unusual, as tourists are generally seen as providing economic benefits to the host state, whereas non-resident students have typically been considered an economic burden. Both groups, however, come to the state on a temporary basis, spend money which would not otherwise enter the economy, and attract other visitors (as well as other students) to the state. The purpose of this research effort is to test the validity of this analogy—that is, to estimate the economic costs of non-resident students and to determine the net economic benefits of non-resident students on the economy of West Virginia. Specifically, this research is based on a case study of all higher education institutions governed by the West Virginia Board of Regents and focuses on the following objective: to determine the costs and benefits to the State of West Virginia of the non-resident students during 1985–86.*

Limitations of the Study

Several questions were raised during previous research on this subject, two of which deserve special comment. First, figures displayed in this study comprise the *state allocations* to higher education with money spent in the West Virginia economy by non-resident students. The figures are not directly comparable but are more akin to return on investment rather than a one-for-one return of tax dollars. Second, the students' economic impact on the state's economy must be judged by that standard. Additional students could be desirable as in economic

*The authors wish to acknowledge the assistance of Mr. James J. Schneider, Director of Finance, West Virginia Board of Regents, for his assistance in this study.

strategy, but the individual colleges and universities must be supported by the State in order to provide the quality education the students seek. Otherwise, non-resident students could be good for the State, but not necessarily for the institution.

Literature Review

Although much of the controversy about policy toward non-resident students centers upon economic issues, there has been little empirical investigation of the economic impact of out-of-state students on the state and public institutions of higher education.

Several studies examine the issues concerning non-resident students. These, however, attempt to understand the causes and motivations of student migration (McHugh and Morgan, 1984; Long, 1976; Greenswood, 1973; Schwartz, 1973) or the legality of tuition differentials for non-resident students (Lines, 1983).

The public debate on tuition increases for non-resident students, however, is gaining importance given the existing popular support for limiting government spending, and the general prospect of tight budgets for higher education institutions. Proponents of non-resident tuition increases argue that non-resident tuition rates below the full cost of educating these students represent a subsidy to residents of other states, and that the first obligation of a state is to satisfy the educational needs of its own residents (McHugh and Morgan, 1984). Opponents of such increases often express concern about the effect of high non-resident tuition rates on students. They contend that such increases reduce the range of choices available to students and reduce the competitiveness of the market for education. They also point out that non-resident students contribute to the social and cultural base of the university and contribute to the state's economy by their spending (Morgan, 1983) and in some cases by remaining in the state as residents after graduation (Long, 1976).

Our review of the research revealed four studies which support the opponents of non-resident tuition increases and are also closely related to the perspective of this paper. Ontjes and Browning (1973) conducted a study to determine the total monetary contributions to Northwest Missouri State University, the State of Missouri and to Missourians attributable to the presence of non-resident students attending Northwest Missouri State University. The study also determined the impact of these expenditures on Missouri's economy with the use of an appropriate multiplier and determined the increased cost to the State of educating non-resident students at Northwest Missouri State University. A survey using a random sample of non-resident students in attendance at NWMSU determined their spending patterns. The study came to a definitive conclusion that non-resident students were an economic asset to the University, the local community and the State.

A similar study was conducted by Ashton and Huff (1973) concerning the economic impact of spending by students in Arizona universities. Their findings support those of Ontjes and Browning in Missouri, that is, that non-resident students are an economic boost to the State and the University.

Likewise, the Vermont State Commission on Higher Education (1979) provides insight into the economic and social impact of the 22 colleges and universities in Vermont. The Commission measured the short-term cash flows and expenditures by students and institutional revenues by in-state/out-of-state students.

In an analysis of the independent sector of higher education in the State of New York, Gay and Weintraub (1978) reveal the importance of this sector in the State's recovery effort. The operating revenues of independent higher education in 1976 amounted to over $2 billion, of which 30 percent was from out-of-state sources; out-of-state students spent an estimated $8 billion in 1977–78. The authors conclude that the importation of monies by out-of-state students is a significant factor in the growth of the independent sector which in turn is an important element in the State's economy.

More recently, Smith and Bissonnette (1985) corroborated the findings of the earlier studies that non-resident students are an economic benefit to the host state. The results of their study of non-resident students at West Virginia University indicate that the return on investment in terms of economic activity approaches three dollars for every one dollar of state tax dollar invested on out-of-state students.

Methods and Results

Part I. Estimation of Economic Benefits

The economic benefits of non-resident students on the West Virginia economy was estimated by summing the approximate effects of three major categories of direct impact—tuition and fees, visitor expenditures and student living expenses—and an appropriate multiplier to account for any indirect economic impact. First, an estimate of the direct economic contribution from non-resident student tuition and fees was calculated by multiplying the annual non-resident graduate and undergraduate tuition and fee charges (1985-86) by the FTE student enrollment, graduate and undergraduate respectively (Table 1).

Based on these calculations, an estimated $28,818,500 was directly contributed to West Virginia's economy from the non-resident student tuition and fee charged by West Virginia Board of Regents institutions during the study year.

Next, the direct economic contribution of non-resident student living expenditures was estimated by multiplying the total number of non-resident FTE students (graduate and undergraduate) by an estimate of annual student living expenses (Table 2).

This estimate of annual student living expenses is based on the results of a West Virginia University economic impact study (Yi, 1984) and the educational expense budgets used at each institution to determine student eligibility for financial aid for the academic year 1985-86. Based on this estimate of student living expenses, the total annual non-resident student living expenditures for 1985-86 statewide was $40,411,873.

In addition, visitor contributions to the community and State economy was estimated using the method recommended by Caffrey and Isaacs (1971). As shown in Table 3, the method used multiplies the non-resident FTE enrollment times an estimated number of visitors per student annually (1.5 visitors) times an estimate of visitor cost per day ($65) times an estimated number of visit days per visitor (3 days).

TABLE 1

ESTIMATE OF TOTAL TUITION AND FEES PAID BY NON-RESIDENT STUDENTS IN THE WEST VIRGINIA SYSTEM OF HIGHER EDUCATION 1985-86[1]

Institution	Student Level	FTE Enrollment (Level)	×	Tuition & Fee Charges	=	Contribution to Economy
WV University	Undergraduate	5,469		$3,140		$17,172,660
WV University	Graduate	877		3,340		2,929,180
Marshall Univ.	Undergraduate	518		2,600		1,346,800
Marshall Univ.	Graduate	59		2,840		167,560
College of Grad. Studies	No Non-Resident Enrollment					
Bluefield State College	Undergraduate	116		2,300		266,800
Concord College	Undergraduate	185		2,300		425,500
Fairmont State College	Undergraduate	236		2,300		542,800
Glenville State College	Undergraduate	80		2,300		184,000
Shepherd College	Undergraduate	925		2,300		2,127,500
West Liberty State College	Undergraduate	631		2,300		1,451,300
WV Institute of Technology	Undergraduate	331		2,300		761,300
WV Institute of Technology	Graduate	12		2,670		32,040
WV State College	Undergraduate	241		2,300		554,300
Parkersburg Comm. College	Undergraduate	28		1,920		53,760
Southern WV Comm. College	Undergraduate	119		1,920		228,480
WV Northern Comm. College	Undergraduate	86		1,920		165,120
Potomac State	Undergraduate	178		2,300		409,400
TOTAL		10,091				$28,818,500

[1]For purposes of consistency and generalizability, this study excludes the medical center campuses in terms of budget and student FTE in all calculations.

TABLE 2

AN ESTIMATE OF TOTAL STUDENT LIVING EXPENSES BY NON-RESIDENT STUDENTS FOR THE ACADEMIC YEAR 1985-86

Institution	Annual Student Living Expenses[2]	×	Total Non-Res. FTE Enrollment	=	Annual Non-Res. Student Living Exp.
West Virginia University	$4,233		6,346		$26,862,618
Marshall Univ.	3,915		577		2,258,955
Bluefield State College	3,750		116		435,000
Concord College	3,414		185		631,590
Fairmont State College	3,448		236		813,728
Glenville State College	3,510		80		280,800
Shepherd College	3,524		925		3,259,700
West Liberty State College	3,438		631		2,169,378
WV Institute of Technology	4,326		343		1,483,818
WV State College	3,698		241		891,218
Parkersburg Comm. College	3,176		28		88,928
Southern WV Comm. College	3,378		119		401,982
WV Northern Comm. College	3,039		86		261,354
Potomac State College	3,218		178		572,804
TOTAL			$10,091		$40,411,873

TABLE 3

AN ESTIMATE OF STATEWIDE NON-RESIDENT STUDENT VISITORS' EXPENDITURES FOR THE ACADEMIC YEAR 1985-86

Total Nonres. Enrollment	# Visitors Per Student	Daily Visitor Expense	# Visit Day Per Visitor	Total Nonres. Student Visitor Expense
10,091	1.5	$65	3	$2,951,618

[2]The estimates of student living expenses used in this study are based on those calculated for single students, living off-campus, with no dependent children.

Therefore, based on these calculations and methods, approximately $3 million ($2,951,000) was infused into the West Virginia economy by friends and relatives visiting non-resident students in 1985-86.

An estimate of the total *direct* economic contribution by non-resident students to the local and state economies was then calculated by summing the estimated contributions from tuition and fee charges, student living and visitor expenditures (Table 4).

An estimated $72,181,991 direct economic benefit was thus calculated to be associated with higher education's non-resident enrollment during the study year.

Finally, in terms of economic benefits, an estimate of the *indirect* economic impact of non-resident students was calculated using an appropriate multiplier. The available research suggests a multiplier of 1.2 as appropriate for a study of this nature (Table 5).

TABLE 4

AN ESTIMATE OF TOTAL DIRECT ECONOMIC BENEFIT OF NON-RESIDENT STUDENTS TO THE WEST VIRGINIA ECONOMY 1985-86

Contributed Source	Estimate Benefits
Tuition & Fee Charges	$28,818,500
Student Living Expenses	40,411,873
Visitor Expenditures	2,951,618
TOTAL	$72,181,991

TABLE 5

AN ESTIMATE OF THE TOTAL ECONOMIC BENEFIT (DIRECT AND INDIRECT) ASSOCIATED WITH 1985-86 NON-RESIDENT ENROLLMENT

Total Direct Economic Benefit	×	Multiplier	=	Total Economic Benefit
$72,181,991		1.2		$86,618,389

The 1.2 multiplier is considered conservative, and models used in other economic impact studies have ranged from 1.5 to 3.5. However, the most recent verifiable multiplier available from the West Virginia University Bureau of Business Research and applicable to the West Virginia economy is 1.2. If a more current multiplier becomes available it will be applied to the research data and an updated report prepared.

As explained by Yi, 1984, the indirect impact is measured by multipliers which are the result of secondary rounds of spending in the economy of the host state. When new injections of spending occur in the economy, as with a non-resident student, the funds thus spent become additional income for other individuals who then respend a portion of it. They, in turn, generate additional income for still other individuals and jobs for the state's economy. The impact of total spending by non-resident students in the state is, therefore, a multiple of the total dollars spent directly. The multiplier used in this study, then—1.2—means that every dollar expended on goods and services by non-resident students and their visitors generate $1.20 in the state's economy. Therefore, based on these methods and calculations, an estimated total economic benefit of $86,618,389 was associated with the 1985-86 non-resident enrollment.

Part 2. Estimation of Economic Costs

The economic costs to West Virginia associated with non-resident students were then estimated by first determining the overall investment (cost) per student (resident and non-resident, all levels) (Table 6).

TABLE 6

AN ESTIMATION OF WEST VIRGINIA'S INSTRUCTIONAL COST PER STUDENT IN 1985-86

1985-86 Net State Appropriation[3]	/ Annualized FTE Student Enrollment	= State Investment Per FTE Student
$147,583,000	51,945	$2,841

[3]Excludes Research ($4,499,000), Public Service ($3,582,000) and transfers to Auxiliary Enterprises ($2,285,000).

For the academic year 1985–86, the direct cost per FTE student to the State of West Virginia was $2,841. In order to calculate, the total cost to the non-resident students, the cost per FTE student ($2,841) was multiplied by the total 1985–86 non-resident enrollment (10,091). This calculation totals $28,668,531 as the cost of total non-resident enrollment at West Virginia Board of Regents institutions (Table 7).

TABLE 7

A CALCULATION OF TOTAL ECONOMIC COSTS TO WEST VIRGINIA ASSOCIATED WITH 1985–86 NON-RESIDENT ENROLLMENT

Investment/Student	×	Non-Resident FTE Enrollment	=	Total Economic Cost
$2,841		10,091		$28,668,531

Part 3. Benefit to Cost Comparison

A. Non-Resident Students

To complete the analysis of economic impact associated with non-resident enrollment, an overall benefit-to-cost ratio was then calculated (Table 8).

TABLE 8

AN ESTIMATE OF ECONOMIC BENEFIT-TO-COST RATIO ASSOCIATED WITH WVU'S 1983–84 NON-RESIDENT ENROLLMENT AT WEST VIRGINIA BOARD OF REGENTS INSTITUTIONS

Total Economic Benefit	/	Total Economic Costs	=	Benefit/Cost Ratio
$86,618,389		$28,668,531		3.02

A benefit-to-cost ratio of 3.02 represents the net economic impact on West Virginia's state and local economies associated with higher education's non-resident enrollment in 1985–86. This ratio suggests that for each one dollar invested by the State in non-resident students, the State realized a return on investment of 3.02 over the period of one academic year (10 months).

Table 8 details the generic calculation of economic benefit wherein dollars "spent in the economy" are shown as a ratio against tax dollars spent in promoting the activity. We emphasize this point lest invalid comparisons be made.

Conclusions

These data suggest that the non-resident student industry associated with higher education in West Virginia yields significant net economic benefits to the State economy: the concept of the economically burdensome non-resident student simply is not borne out by the results of this research. The analogy of the non-resident student and the tourist appears to remain intact. Certainly, a business or tourist group which could infuse over $86 million in "new" money annually into the State economy and offer a return on investment of three to one is a good state investment and should be carefully nurtured.

While one might wish for data more specific and precise than the available "estimates," the methodology and data used for this research were deliberately selected to be conservative in nature and thus, in all probability, yield results which reflect a low-end estimate of the true economic impact.

Therefore, in light of this research, the state legislature would be well advised to consider the economic impacts of the non-resident student industry when considering institutional funding requests or when

questions arise concerning such things as tuition increases and/or enrollment percentages of non-resident students. The results of this study clearly suggest that non-resident students may well be, in fact, a positive factor in the State economy.

An investment in quality higher education at a competitive price will attract the non-resident student industry, which will in turn contribute significantly to the local and state economies.

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